

APPENDIX IV PROCESS FOR CREATING THE FINAL EMISSION SURROGATES

4/27/00

Bring the population and landuse coverages in here and create a coverage of surrogates based on the surrogate file in the smoke data directory.

Arc: copy AERO_3_LU ../ws.surrogate/AERO_3_LU

Arc: copy POP96_2KM ../ws.surrogate/POP96_2KM

Here are the surrogates I need to create for a surrogate cov

SSC Description

50 Population

51 Housing

52 Inverse Housing

53 Inverse Population

54 Rural

55 Urban

60 Area

61 Forest

62 Agriculture

63 Water

64 Rural Forest

65 Urban Forest

71 Airports

72 Highways

73 Ports

74 Railroads

Next 2 are added by me

80 POTW

81 Land fills

I think the first thing I will do to create some new items in AERO_3_LU that match some of the above and recalculate the other lu items to map them to these new items.

Going to be a bit more involved than I thought to get some good surrogates. Here I go.

Current location: /trinidad/uam_aero/ws.uamaero/ws.lu/ws.work_covs

Arc: copy DOM2K_GRD ../ws.surrogate/DOM2K_GRD

Arc: copy GWALU_GRD ../ws.surrogate/GWALU_GRD

gwalu_grd is the qget grid of landuse at 30 meters. Here are the items in the grid. The lucode I added in ws.lu to create my first landuse grid for the roughness and depostion factors.

Arc: list GWALU_GRD.vat

Record	VALUE	COUNT	DESCRIPTION	LUCODE
1	0	10565809	No Data	0
2	1	3823306	USFS	0
3	2	2531663	BLM	0
4	3	622098	State of Utah	0
5	6	356990	Military	0
6	7	1058	National Park/Monument	0
7	8	237209	Utah State Parks and Rec.	0
8	9	487359	State Wildlife Management	0
9	11	115272	National Wildlife refuge	0
10	12	429719	Wilderness	0
11	13	97515	Federal Grasslands	3
12	39	3493571	Water Bodies	0
13	40	1644	Intermittent Water Bodies	0
14	101	929568	R1 - Single Family	1
15	102	12522	R2 - 2-4 Units	1
16	103	17232	R3 - Multi-family	1
17	104	10544	R4 - Mobile Homes	1
18	105	555	R5 - Group Quarters	1
19	106	99908	C1 - Retail	1
20	107	110566	C2 - Industrial	1
21	108	8224	C3 - Warehouse	1
22	109	2720	C4 - Office	1
23	110	207189	C5 - Special Purpose	1
24	111	474138	Exempt	0
25	112	939118	Agriculture	2
26	113	1281149	Vacant	0
27	119	28969	Parks / Open Space	3
28	212	865951	Irrigated Cropland	2

Get rid of the dom2k_grd zone grid as it is too large. Going to use AERO_3_LU as the zone grid.

Grid: kill DOM2K_GRD all

Grid: aeroxone = polygrid(AERO_3_LU,cell-id,##,2000)

5/12/00

Before I go any farther I am going to get the old railroad coverage from the O₃ UAM and the most current mobile line coverages and bring them into this workspace; since they are also part of the surrogates. This is also going to mean a little detour while I create the coverages of roads from UDOT given to me for this study.

From what I can tell at this point the only updated line files that I have for road networks is from

UDOT in /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.MOBILE. Those are shapefiles called vmt96 which I am now going to convert.

Current location: /trinidad/uam_aero/ws.uamaero/ws.mobile

Arc: shapearc vmt96 udot_aero

Check it out in AE see what it looks like

Looks good.

Arc: copy UDOT_AERO ../ws.surrogate/UDOT_AERO

This looks good. I will be able to use it for the highways surrogate for the surrogate cov. Won't need any other line coverage for roads for this one.

5/15/00

Don't have the railroad data at this point, unfortunately. So, I will proceed with the others and add the railroads when I get it.

To get a handle on this I am going to start by going down the list. First is population, scc = 50.

Create the first SCC cov.

Arc: copy ../AERO3_2KM ./scc_cov1

Arc: tables

Tables: copy POP96_2KM.pat pop.join

Drop the unnecessary items

Arc: items pop.join

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
--------	-----------	-------	--------	------	-------	----------------

INDEXED?

1	CELL-ID	4	5	B	-	-
5	POP96	4	8	B	-	-

Arc: joinitem SCC_COV1.pat pop.join SCC_COV1.pat cell-id

Now for housing, 51, a completely different animal.

Gonna do this in GRID the following way.

Grid: housegrid = select(GWALU_GRD, 'value > 100 and value < 106')

Now I have a 30 m grid of all housing. Now do a zonal sum to get my housing surrogate.

Grid: list housegrid.vat

Record	VALUE	COUNT
1	101	929568
2	102	12522
3	103	17232
4	104	10544
5	105	555

Grid: calc housegrid.vat INFO value = 1

Grid: setwindow AEROZONE

Grid: setcell minof

Grid: housezone = zonalsum(AEROZONE,HOUSEGRID)

Grid: house_resamp = resample(HOUSEZONE,2000)

Grid: hz_int = int(house_resamp)

Make it a poly cov

Grid: house51_cov = gridpoly(hz_int)

Now take a look at this in AE and see how it looks.

Looks good. This value can remain unitless since the ultimate objective will be to get the % of this surrogate in the cell for a given county. Not sure just yet how to get this value into the surrogate cov. Will leave as is for now, get rid of the grids, and go on.

I am not going to do a rural classification, since I don't have anything classifying it as such. Do a number of classes now.

Arc: tables

Tables: sel AERO_3_LU.pat

Tables: calc urb = 0

Tables: resel aero-lu = 1

388 Records Selected.

Tables: calc urb = 1

Tables: asel

Tables: calc DECIDG = 0

Tables: resel AERO-LU = 4 or AERO-LU = 5 or AERO-LU = 6

1562 Records Selected.

Tables: calc DECIDG = 1

Tables: asel

Tables: calc ag = 0

Tables: resel aero-lu = 2

645 Records Selected.

Tables: calc ag = 2

Tables: asel

Tables: calc watg = 0

Tables: resel aero-lu = 7

1033 Records Selected.

Tables: calc watg = 1

Tables: calc watg = 7

ok

Tables: sel

Tables: copy AERO_3_LU.PAT surgat.join

Drop unnecessary items

Arc: tables
 Tables: sel surgat.join
 Tables: alter DECIDG
 COLUMN ITEM NAME WIDTH OUTPUT TYPE N.DEC ALTERNATE NAME
 9 DECIDG 4 8 B -
 Item Name: forest

Now add them to the surrogate cover.

Go back now and get the housing into the surrogate coverage.

Arc: tables
 Tables: sel HOUSE51_COV.pat
 Tables: alter grid-code
 Item Name: housing

Arc: identity HOUSE51_COV ../AERO3_2KM houses2_cov
 Get rid of some items

Looks good in AE

Arc: tables
 Tables: copy HOUSES2_COV.pat house.join
 Drop unneeded items
 Arc: joinitem SCC_COV1.pat house.join SCC_COV1.pat cell-id

5/16/00

Now, need to get airports, railroads, and highways in the mix.
 Start with highways.

Arc: copy UDOT_AERO highway_scc
 Now eliminate roads so that I just have major highways left.
 Arc: clip HIGHWAY_SCC ../state_clp3 HIGHWAY_SCC2 line
 Arc: killem HIGHWAY_SCC
 Arc: identity HIGHWAY_SCC2 SCC_COV1 HIGHWAY_SCC3 line
 Now get rid of all the items I don't need and create a join file for scc_cov1
 Tables: copy HIGHWAY_SCC3.aat highway.join
 Get rid of the items
 Arc: tables
 Tables: sel highway.join
 Tables: alter length
 Item Name: highwaylength

Arc: frequency highway.join highway.frq
 Enter Frequency item names (type END or a blank line when done):

=====
 Enter the 1st item: cell-id
 Enter the 2nd item: end

Enter Summary item names (type END or a blank line when done):

=====

Enter the 1st item: highwaylength

Enter the 2nd item: end

Arc: joinitem SCC_COV1.pat highway.frq SCC_COV1.pat cell-id

Arc: killem HIGHWAY_SCC2 HIGHWAY_SCC3

Now do airports and railroads

Arc: import cover trair airport

Arc: import cover trrrd railroad

Arc: clip airport ../state_clp3 airport2 line

Arc: clip railroad ../state_clp3 railroad2 line

Arc: additem RAILROAD2.aat RAILROAD2.aat raillength 4 12 f 3

Arc: identity RAILROAD2 SCC_COV1 RAILROAD3 line

Now do a frequency

Arc: tables

Tables: sel RAILROAD3.AAT

Tables: calc raillength = length

Arc: frequency RAILROAD3.AAT rail.frq

Enter Frequency item names (type END or a blank line when done):

=====

Enter the 1st item: cell-id

Enter the 2nd item: end

Enter Summary item names (type END or a blank line when done):

=====

Enter the 1st item: raillength

Enter the 2nd item: end

Now join them

Arc: joinitem SCC_COV1.pat rail.frq SCC_COV1.pat cell-id

I still need to get some data from Steve P for airports. Also I will create a couple of new surrogates for POTWs and landfills which I will get from him to finish this coverage. Now, I will create the values of % that I need to use to create the output file.

First need to get a fips code attached to each cell.

Current location: /trinidad/uam_aero/ws.uamaero/ws.lu

Arc: tables

Tables: copy AERO_3_LU.pat fip.join

Tables: q

Get rid of the items I don't need

Arc: joinitem SCC_COV1.pat ../ws.lu/fip.join SCC_COV1.pat cell-id

Add all of the scc code items to scc_cov1. Call them scc50 etc.

Arc: additem SCC_COV1.pat SCC_COV1.pat scc50 5 5 n 3

etc.

5/17/00

I now have the % of all of the surrogates except for airports, POTWs, etc. I did this with the scc.aml in this directory. For urban forest I did the following:

Arcplot: clearsel

Arcplot: resel SCC_COV2 poly housing > 0

SCC_COV2 polys : 1133 of 7572 selected.

Arcplot: calc SCC_COV2 poly scc65 = scc51

Arcplot: q

Now wait to get the final data from Steve P.

5/27/00

POTW's are done. In POTWLL coverage.

Airports done. In AIRPOLYLL coverage.

6/2/00

Doin' dumps. The surrogate for landfills is created in dump.aml. The logic and method should be apparent there.

Thats done. One little detail to work out on 1 SL dump. Other than that it looks good.

6/8/00

Now it is time to sew these all together into a surrogate polygon coverage or really a .pat file that I will eventually unload. I think all of the various coverages I need to do this should be here in ws.surrogate.

Get my starting coverage.

Arc: copy ../AERO_3_FIP surrogate1

Get column and row items and attributes set. This is done with colrow.aml.

Done

Let me list the surrogates I need once again. This list of surrogates is the complete list of surrogates for mobile and area sources to be used with this running of SMOKE for the 1996 February episode.

SSC Description

50	Population	
51	Housing	
52	Inverse Housing	(not used)
53	Inverse Population	(not used)
54	Rural	(not used)
55	Urban	
60	Area	
61	Forest	
62	Agriculture	
63	Water	
64	Rural Forest	(not used)
65	Urban Forest	(not used)
71	Airports	
72	Highways	
73	Ports	(not used)
74	Railroads	

Next 6 are added by me

80	POTW	
81	Land fills	
10	local	
20	freeway	
30	ramp	
40	arterial	
41	rural arterial	
42	Weber arterial	
43	Weber local	

The rural arterial is a separate surrogate because of the way vmt is reported by UDOT for the outlying counties. It is both put on a network and additional vmt is reported in the towns and outlying parts of the county.

Revamp scc_cov1 with all new surrogate % items

First drop the old then add the new

Arc: dropitem SCC_COV1.pat SCC_COV1.pat

Enter the 1st item: SCC50

Enter the 2nd item: etc...

Arc: additem SCC_COV1.pat SCC_COV1.pat ssc10 4 12 f 7

etc., etc.

Now add in all of the data needed for the other surrogates to this coverage then calculate the percentages and then add the row column data and this will be one complete coverage of the surrogate data needed to create the AGPRO/MGPRO file.

Attach the data

Airports

Tables: copy AIRPOLYLL.PAT air.join

Tables: sel air.join

Tables: alter percent

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
5	PERCENT	5	6	N	2	

Item Name: ssc71

Drop all items except cell-id and percent

Arc: joinitem SCC_COV1.pat air.join SCC_COV1.pat cell-id

POTW

Tables: copy POTWLL.pat potw.join

Tables: sel potw.join

Tables: alter percent

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
55	PERCENT	5	6	N	2	

Item Name: ssc80

Drop all items except cell-id and percent

Arc: joinitem scc_cov1.pat potw.join scc_cov1.pat cell-id

Dumps

Tables: copy DUMP_PTS4.pat dump.join

Tables: sel dump.join

Tables: alter percent

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
27	PERCENT	4	4	N	2	

Item Name: ssc81

Drop all items except cell-id and percent

Arc: joinitem scc_cov1.pat dump.join scc_cov1.pat cell-id

Mobile surrogates

This will be a different and more involved process to get the mobile surrogate into the coverage since they are arc coverages.

Start with the WF arterial, freeway and ramp surrogates.

6/12/00

...Instead of separating these classes into poly cov's I will make separate line covs for each road class using the PUT command in AE.

Mobile surrogates (cont.)

Freeways

Arc: ae;ec WF_ARTFRE3;ef arc;de arc;draw

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ARCEDIT Version 8.0.1 (Fri Dec 3 10:45:59 PST 1999)

The edit coverage is now

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ARTFRE3

WARNING the Map extent is not defined

Defaulting the map extent to the BND of

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ARTFRE3

13221 element(s) for edit feature ARC

Coverage has no COGO attributes

Arcedit: sel ft = 1

923 element(s) now selected

Arcedit: put wf_fre

Creating /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_FRE

Copying the arc(s) into

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_FRE...

923 arc(s) copied

ATERIALS

Arc: ae;ec WF_ARTFRE3;ef arc;de arc;draw

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ARCEDIT Version 8.0.1 (Fri Dec 3 10:45:59 PST 1999)

The edit coverage is now

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ARTFRE3

WARNING the Map extent is not defined

Defaulting the map extent to the BND of

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ARTFRE3

13221 element(s) for edit feature ARC

Coverage has no COGO attributes

Arcedit: sel ft > 1 and ft < 7
 11705 element(s) now selected
 Arcedit: put wf_art
 Creating /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ART
 Copying the arc(s) into
 /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ART...
 11705 arc(s) copied
 Arcedit: ec WF_ART;ef arc
 The edit coverage is now
 /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_ART
 11705 element(s) for edit feature ARC
 Coverage has no COGO attributes
 Arcedit: sel all
 11705 element(s) now selected
 Arcedit: statistics

Enter statistical expressions. Type END or blank line to end.

Statistics: sum perft2

Statistics: end

Record	FREQUENCY	SUM-PERFT2
1	11705	4.000000

RAMPS

Arcedit: sel ft = 7
 593 element(s) now selected
 Arcedit: put wf_ramp
 Creating /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_RAMP
 Copying the arc(s) into
 /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_RAMP...
 593 arc(s) copied
 Arcedit: ec wf_ramp;ef arc
 The edit coverage is now
 /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/WF_RAMP
 593 element(s) for edit feature ARC
 Coverage has no COGO attributes
 Arcedit: sel all
 593 element(s) now selected
 Arcedit: statistics

Enter statistical expressions. Type END or blank line to end.

Statistics: sum perft7

Statistics: end

Record	FREQUENCY	SUM-PERFT7
1	593	4.000000

These all look GOOD.

Now I have a separate coverage for freeway, arterial and ramps for the WF counties. Go back up to the method above and do the same prep process to get the surrogates finished.

But first do the **outlying** counties.

Freeway

Arc: ae;ec OUTLY_UDOT3;ef arc;de arc;draw

972 element(s) for edit feature ARC

Coverage has no COGO attributes

Arcedit: sel fc = 1

210 element(s) now selected

Arcedit: put outly_fre

Creating /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_FRE

Copying the arc(s) into

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_FRE...

210 arc(s) copied

Arterial

Arcedit: sel fc = 2

756 element(s) now selected

Arcedit: put outly_art

Creating /TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_ART

Copying the arc(s) into

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_ART...

756 arc(s) copied

Arcedit: sel fc <> 1 and fc <> 2

6 element(s) now selected

Arcedit: list fc

Record FC

372 3

406 3

421 3

426 3

434 3

709 3

Arcedit: ec OUTLY_FRE

The edit coverage is now

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_FRE

Arcedit: sel all

No edit feature selected

Arcedit: ef arc

210 element(s) for edit feature ARC

Coverage has no COGO attributes

Arcedit: sel all

210 element(s) now selected
Arcedit: statistics

Enter statistical expressions. Type END or blank line to end.

Statistics: sum perfc1

Statistics: end

Record FREQUENCY SUM-PERFC1

1 210 5.000000

Arcedit: ec outly_art

The edit coverage is now

/TRINIDAD/UAM_AERO/WS.UAMAERO/WS.SURROGATE/OUTLY_ART

Arcedit: ef arc;sel all

756 element(s) for edit feature ARC

Coverage has no COGO attributes

756 element(s) now selected

Arcedit: statistics

Enter statistical expressions. Type END or blank line to end.

Statistics: sum perfc2

Statistics: end

Record FREQUENCY SUM-PERFC2

1 756 9.000000

I'll do a QA on these by doing a frequency on each coverage of fips values. If the freeway cov has five fips and the arterial cov has nine fips things are good.

Yup. Looks good.

Now get the local surrogate. Actually, thats already been done.

The process now is to get all of the surrogates into 1 coverage. Here we go...

Arc: tables

Tables: copy WF_FRE.aat wffre.join

Tables: copy WF_ART.aat wfart.join

Tables: copy WF_RAMP.aat wframp.join

Tables: copy ALL_LOCAL.pat alllocal.join

Tables: copy OUTLY_ART.aat outlyart.join

Tables: copy OUTLY_FRE.aat outlyfre.join

Tables: copy web_art2.aat webart.join

Drop superfluous items in all of them. Leave only cell-id and the precentage name.

Now create frequency files for all of the join files created from aat's. This is because multiple arcs could be identitied with a single cell-id. Since percentages were created by taking the arc vmt over the county vmt for a road class, summing these percentages by cell-id, using frequency, will give the proper surrogate % for a county.

Arc: frequency WFFRE.JOIN wffre.frq

Enter Frequency item names (type END or a blank line when done):

=====

Enter the 1st item: cell-id

Enter the 2nd item: end

Enter Summary item names (type END or a blank line when done):

=====

Enter the 1st item: perft1

Enter the 2nd item: end

Same process gets done for wfart.join, wframp.join, outlyart.join, outlyfre.join, and webart.join.

Now join these up to scc_cov1

Arc: joinitem scc_cov1.pat WFFRE.FRQ scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat WFART.FRQ scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat WFRAMP.FRQ scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat ALLLOCAL.JOIN scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat OUTLYART.FRQ scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat OUTLYFRE.FRQ scc_cov1.pat cell-id

Arc: joinitem scc_cov1.pat WEBART.FRQ scc_cov1.pat cell-id

Ramps

Tables: sel scc_cov1.pat

7572 Records Selected.

Tables: alter PERFT7

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
142	PERFT7	4	12	F	7	

Item Name: ssc30

Local

Tables: alter PERLOC

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
146	PERLOC	4	12	F	7	

Item Name: ssc10

Rural Arterial

Tables: alter PERARTRURAL

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
150	PERARTRURAL	4	12	F	7	

Item Name: ssc41

Weber Arterial

Tables: alter PER42

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
162	PER42	4	12	F	7	

Item Name: ssc42

Freeway

First, add rural + WF

Tables: alter PERFT1

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
142	PERFT1	8	18	F	6	

Item Name: ssc20

Arterial

Add rural + WF

Tables: calc PERFT2 = PERFT2 + PERFC2

Tables: alter perft2

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
150	PERFT2	8	18	F	6	

Item Name: ssc40

Drop a few unnecessary items.

Two things are left to do. 1) Edit and rerun scc.aml to create the percentages for the remaining surrogates. 2) Create a final coverage for a final surrogate called Weber local. This is for mobile emissions from local roads outside the WFRC modeling domain in Weber County. These are vmt from UDOT.

Since I only have the corporate boundary of Huntsville outside the WFRC domain, but do not have TAZ population all the way to the Lake, I will put 75% of the surrogate west of Ogden population and 25% in Huntsville. Kip agrees that that is reasonable. Keep in mind that the UDOT local vmt is only about 10% of the Weber local vmt from the transportation demand model.

1)Edit and run scc.aml.

Done

First I better do some QA

Ran qa.aml. Few small problems flagged with "problem" in qa.out.

After these are worked out do some visual checks.

2) Do the final Weber local surrogate - 43.

Arc: copy ../ws.pop/POP96_2KM ./web_loc

add an item to receive the % surrogate

In AE bring up back coverages so that I can tell where to put the local vmt surrogate between the populated area of Ogden and the lake and in Huntsville. Choose cells visually and put the correct percentages in the cells so that when they are added up they equal 1.

Done

Tables: copy WEB_LOC.pat webloc.join

Tables: sel webloc.join

7572 Records Selected.

Tables: alter per43

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
63	PER43	4	12	F	7	

Item Name: ssc43

drop superfluous items.

Join 'em up

Arc: joinitem SCC_COV2.pat webloc.join SCC_COV2.pat cell-id

Now, go back and take care of the QA problems identified in qa.out and put all of the intermediate coverages into a ws.covs directory.

\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$ LOOKS GOOD - SURROGATES ARE DONE \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

Qa.out shows that the surrogates all add up to 1 as they should. Next step is to create vizual qa's then create the mgpro/agpro ascii file.

6/15/00

The visual qa of local vmt showed me an error the source of which I found in the all-loc.aml in ws.mobile. I fixed that, reran it and now need to redo the local surrogate.

Current location: /trinidad/uam_aero/ws.uamaero/ws.surrogate/ws.covs

Arc: killem ALL_LOCAL

Current location: /trinidad/uam_aero/ws.uamaero/ws.surrogate

Arc: copy ../ws.mobile/ALL_LOCAL ../ALL_LOCAL

Tables: copy all_local.pat ALLLOCAL.JOIN

Tables: copy all_local.pat artrural.join

Drop the unnecessary items from each file.

Arc: dropitem SCC_COV2.pat SCC_COV2.pat

Enter item names (type END or a blank line when done):

=====

Enter the 1st item: SSC41

Enter the 2nd item: SSC10

Enter the 3rd item: end

Arc: joinitem SCC_COV2.pat ALLLOCAL.JOIN SCC_COV2.pat cell-id
Arc: joinitem SCC_COV2.pat artrural.join SCC_COV2.pat cell-id

Tables: sel SCC_COV2.pat

Tables: alter PERLOC

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
170	PERLOC	4	12	F	7	

Item Name: ssc10

Tables: alter PERARTRURAL

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME
174	PERARTRURAL	4	12	F	7	

Item Name: ssc41

Did it. Re-QA'd it. Looks good. Back to the visual QA.

6/16/00

Visual looks good. Now create the AGPRO and MGPRO files for SMOKE.

Do an aml, agro.aml, to get the job done. Documentation, process and logic will be found in that aml.

SCC.AML

```
/* 5/17/00
/*
/* scc.aml - calculates the % of the remaining surrogate types in each cell.
/* PB
/* adapted 6/13/00
/*
&echo &on

&if [exists scc_cov2 -cover ] &then
    kill scc_cov2 all
copy scc_cov1 scc_cov2
&s cov = scc_cov2
ap
clearsel

&s fill1 = fips
&s unit1 = [open %fill1% 0 -read]

&do n = 1 &to 15
    &type %n%
    &s fip = [read %unit1% readstatus]
    clearsel
    resel %cov% poly fips = %fip%

    statistics %cov% poly
    sum pop96          /* 1
    sum ag              /* 2
```

```

sum urb          /* 3
sum forest       /* 4
sum watg         /* 5
sum housing      /* 6
sum highwaylength /* 7
sum raillength   /* 8
end
[unquote '']
/**** NOW SET VARIABLES FOR THESE STATS
&s sc50 = [show statistic 1 1]
&s sc62 = [show statistic 2 1]
&s sc55 = [show statistic 3 1]
&s sc61 = [show statistic 4 1]
&s sc63 = [show statistic 5 1]
&s sc51 = [show statistic 6 1]
&s sc72 = [show statistic 7 1]
&s sc74 = [show statistic 8 1]

&if %sc50% = 0 &then
    &goto jump1
calc %cov% poly ssc50 = ( pop96 / %sc50% )
    &label jump1
&if %sc62% = 0 &then
    &goto jump2
calc %cov% poly ssc62 = ( ag / %sc62% )
    &label jump2
&if %sc55% = 0 &then
    &goto jump3
calc %cov% poly ssc55 = ( urb / %sc55% )
    &label jump3
&if %sc61% = 0 &then
    &goto jump4
calc %cov% poly ssc61 = ( forest / %sc61% )
    &label jump4
&if %sc63% = 0 &then
    &goto jump5
calc %cov% poly ssc63 = ( watg / %sc63% )
    &label jump5
&if %sc51% = 0 &then
    &goto jump6
calc %cov% poly ssc51 = ( housing / %sc51% )
    &label jump6
&if %sc72% = 0 &then
    &goto jump7
calc %cov% poly ssc72 = ( highwaylength / %sc72% )
    &label jump7
&if %sc74% = 0 &then
    &goto jump8
calc %cov% poly ssc74 = ( raillength / %sc74% )
    &label jump8

&end
&s close = [close %unit1%]
&echo &off
&return

```

DUMP.AML

```
/* 6/7/00
/* dump.aml
/* generates the dump points then id's the cov then gets the surrogate
/* and percent inside.
/*
&echo &on
&if [exists dump_pts -cover] &then
    kill dump_pts all

&if [exists dump_pts2 -cover] &then
    kill dump_pts2 all

&if [exists dump_pts3 -cover] &then
    kill dump_pts3 all

&if [exists dump_pts4 -cover] &then
    kill dump_pts4 all

generate dump_pts
input ll.csv
points
q

project cover dump_pts dump_pts2 /uam5/ws.daq/dd.prj.dd
project cover dump_pts2 dump_pts3 /uam5/ws.daq/dd2utm.prj2
build dump_pts3 point

additem dump_pts3.pat dump_pts3.pat surrogate 2 2 i
additem dump_pts3.pat dump_pts3.pat percent 4 4 n 2

identity dump_pts3 ../aero_3_fip dump_pts4 point

ap

&s cov = dump_pts4
/*&s fill1 = dumpfip.fi
/*&s unit1 = [open %fill1% 0 -read]

&s fil2 = dumppper.fi
&s unit2 = [open %fil2% 0 -read]

&do n = 1 &to 11
    &type %n%
/*    &s fip = [read %unit1% readstatus]
    &s per = [read %unit2% readstatus]
    clearsel
    resel %cov% point %cov%-id = %n%
    calc %cov% point surrogate = 81
    calc %cov% point percent = %per%
&end

q
&s close = [close -all]
```

```
&echo &off
killem dump_pts dump_pts2 dump_pts3
&return
```

COLROW.AML

```
/* 6/8/00
/* colrow.aml
/* This adds column and row items to surrogate1
/*
/* P. Barickman
/*
/*&echo &on
&if [exists surrogate2 -cover] &then
    kill surrogate2 all
copy surrogate1 surrogate2
/*
/* add the column and row items

additem surrogate2.pat surrogate2.pat col 4 4 i
additem surrogate2.pat surrogate2.pat row 4 4 i

/* Do a couple of big ol' loops

ap
    &s jumprow = 4388900          /*** initialize a row jumper
&do a = 1 &to 113
    &s row = %a%
    clearsel
    &s jumpup = ( %jumprow% + 200 )
    resel surrogate2 poly box 348900 %jumprow% 481100 %jumpup%
    &s jumprow = ( %jumprow% + 2000 )
    calc surrogate2 poly row = %row%
&end                          /*** ends the a loop

&s movecol = 348900
&do b = 1 &to 67
    &s col = %b%
    clearsel
    &s moveover = ( %movecol% + 200 )
    resel surrogate2 poly box %movecol% 4388900 %moveover% 4613100
    &s movecol = ( %movecol% + 2000 )
    calc surrogate2 poly col = %col%
&end                          /*** ends b loop

q
/*&echo &off
&return
```

ALLOC.AML

```
/* 6/5/00
/* wf-loc.aml
/* Calculates the % of a counties local vmt for each cell
/*
&echo &on

&if [exists all_local -cover] &then
```

```

kill all_local all
copy ../ws.pop/pop96_2km all_local
&s cov = all_local
additem %cov%.pat %cov%.pat perloc 4 12 f 7
additem %cov%.pat %cov%.pat perartrural 4 12 f 7
additem %cov%.pat %cov%.pat surrogate 2 2 i
additem %cov%.pat %cov%.pat surrogate2 2 2 i
/*
/* surrogate2 is an item to attribute the rural arterial ssc code
ap
clearsel

&s fill = wffip
&s unit1 = [open %fill% 0 -read]

&do n = 1 &to 4                                /* WF counties
  &type %n%
  &s fip = [read %unit1% readstatus]
  clearsel
  resel %cov% poly fips = %fip%

  statistics %cov% poly
  sum pop96
  end
  [unquote '']

  &s loc = [show statistic 1 1]

  calc %cov% poly perloc = pop96 / %loc%
  calc %cov% poly surrogate = 10
  clearsel
&end

&s fil2 = outfip
&s unit2 = [open %fil2% 0 -read]

&do s = 1 &to 9                                /* outlying, including rural arterial
  &type %s%
  &s fip = [read %unit2% readstatus]
  clearsel
  resel %cov% poly fips = %fip%

  statistics %cov% poly
  sum pop96
  end
  [unquote '']

  &s locrur = [show statistic 1 1]

  calc %cov% poly perloc = pop96 / %locrur%
  calc %cov% poly perartrural = pop96 / %locrur%
  calc %cov% poly surrogate = 10
  calc %cov% poly surrogate2 = 41

```

```

clearsel
&end /* end s

&s close = [close -all]
&echo &off
q
&return

QA.AML
/* 6/13/00
/*
/* qa.aml See if the surrogate items add to 1.
/* PB
/*
/*&echo &on

&if [exists qa.out -file ] &then
    rm qa.out
&s cov = scc_cov2
ap
clearsel

&s fill = fips
&s unit1 = [open %fill% 0 -read]

&s unit2 = [open qa.out openstat -write]

&do n = 1 &to 15
    &type %n%
    &s fip = [read %unit1% readstatus]
    &s writestat = [write %unit2% %fip%]
    clearsel
    resel %cov% poly fips = %fip%

    statistics %cov% poly
    sum ssc50          /* 1
    sum ssc51          /* 2
    sum ssc55          /* 3
    sum ssc61          /* 4
    sum ssc62          /* 5
    sum ssc63          /* 6
    sum ssc65          /* 7
    sum ssc72          /* 8
    sum ssc73          /* 9
    sum ssc74          /*10
    sum ssc71          /*11
    sum ssc80          /*12
    sum ssc81          /*13
    sum ssc20          /*14
    sum ssc40          /*15
    sum ssc30          /*16
    sum ssc10          /*17
    sum ssc41          /*18
    sum ssc42          /*19
    sum ssc43          /*20

```

```

end
[unquote ]
/*** NOW SET VARIABLES FOR THESE STATS
&s sc50 = [show statistic 1 1]
&s writestat = [write %unit2% [quote sc50 = %sc50%]]
&s sc51 = [show statistic 2 1]
&s writestat = [write %unit2% [quote sc51 = %sc51%]]
&s sc55 = [show statistic 3 1]
&s writestat = [write %unit2% [quote sc55 = %sc55%]]
&s sc61 = [show statistic 4 1]
&s writestat = [write %unit2% [quote sc61 = %sc61%]]
&s sc62 = [show statistic 5 1]
&s writestat = [write %unit2% [quote sc62 = %sc62%]]
&s sc63 = [show statistic 6 1]
&s writestat = [write %unit2% [quote sc63 = %sc63%]]
&s sc65 = [show statistic 7 1]
&s writestat = [write %unit2% [quote sc65 = %sc65%]]
&s sc72 = [show statistic 8 1]
&s writestat = [write %unit2% [quote sc72 = %sc72%]]
&s sc73 = [show statistic 9 1]
&s writestat = [write %unit2% [quote sc73 = %sc73%]]
&s sc74 = [show statistic 10 1]
&s writestat = [write %unit2% [quote sc74 = %sc74%]]
&s sc71 = [show statistic 11 1]
&s writestat = [write %unit2% [quote sc71 = %sc71%]]
&s sc80 = [show statistic 12 1]
&s writestat = [write %unit2% [quote sc80 = %sc80%]]
&s sc81 = [show statistic 13 1]
&s writestat = [write %unit2% [quote sc81 = %sc81%]]
&s sc20 = [show statistic 14 1]
&s writestat = [write %unit2% [quote sc20 = %sc20%]]
&s sc40 = [show statistic 15 1]
&s writestat = [write %unit2% [quote sc40 = %sc40%]]
&s sc30 = [show statistic 16 1]
&s writestat = [write %unit2% [quote sc30 = %sc30%]]
&s sc10 = [show statistic 17 1]
&s writestat = [write %unit2% [quote sc10 = %sc10%]]
&s sc41 = [show statistic 18 1]
&s writestat = [write %unit2% [quote sc41 = %sc41%]]
&s sc42 = [show statistic 19 1]
&s writestat = [write %unit2% [quote sc42 = %sc42%]]
&s sc43 = [show statistic 20 1]
&s writestat = [write %unit2% [quote sc43 = %sc43%]]
&end
&s close = [close -all]
q
/*&echo &off
&return

```

AGPRO.AML

```

/* 6/16/00
/*
/* agpro.aml Prepares a coverage to output surrogate data for SMOKE.
/* PB

```

```

/*
/*
/*&echo &on

&if [exists scc_cov3 -cover ] &then
    kill scc_cov3 all
copy scc_cov2 scc_cov3
&if [exists appro.out -file] &then
    rm appro.out
&s cov = scc_cov3
additem %cov%.pat %cov%.pat coscty 6 6 i
additem %cov%.pat %cov%.pat col 4 4 i
additem %cov%.pat %cov%.pat row 4 4 i

/* Do a couple of big ol' loops

ap
&s jumprow = 4388900          /*** initialize a row jumper
&do a = 1 &to 113
    &s row = %a%
    clearsel
    &s jumpup = ( %jumprow% + 200 )
    resel %cov% poly box 348900 %jumprow% 481100 %jumpup%
    &s jumprow = ( %jumprow% + 2000 )
    calc %cov% poly row = %row%
&end                          /*** ends the a loop

&s movecol = 348900
&do b = 1 &to 67
    &s col = %b%
    clearsel
    &s moveover = ( %movecol% + 200 )
    resel %cov% poly box %movecol% 4388900 %moveover% 4613100
    &s movecol = ( %movecol% + 2000 )
    calc %cov% poly col = %col%
&end                          /*** ends b loop

clearsel

&s fill = fips
&s unit1 = [open %fill% 0 -read]

&do n = 1 &to 15
    &type %n%
    &s fip = [read %unit1% readstatus]
    clearsel
    resel %cov% poly fips = %fip%
        &if %fip% < 10 &then
            calc %cov% poly coscty = 04900%fip%
        &else calc %cov% poly coscty = 0490%fip%
&end
q

tables
sel %cov%.pat

```



```

&s fil2 = ssc.fi
&s unit2 = [open %fil2% 0 -read]

&do o = 1 &to 20
    &type %o%
    &s ssc = [read %unit2% readstatus]
    resel ssc%ssc% > 0
    unload agro.out %ssc% coscty col row ssc%ssc%
    asel
&end /* ends o
q
/*&echo &off
&s close = [close -all]
&return

```